Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Deployment of Wireline Services Offering	)	CC Docket No. 98-147
Advanced Telecommunications Capability	)	
and		
Implementation of the Local Competition	)	CC Docket No. 96-98
Provisions of the Telecommunications	)	
Act of 1996	)	

COMMENTS OF NETWORK ACCESS SOLUTIONS CORPORATION

by

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SUMMARY

Network Access Solutions ("NAS") makes recommendations on three important issues raised in the Commission's Notices in these proceedings.

First, in response to the request for proposals about how the agency should define the types of equipment that CLECs have a right to collocate under Section 251(c)(6) of the Act, NAS urges the Commission to reinstate the test that the agency had adopted earlier; namely, ILECs must collocate any equipment that is "used or useful" to CLEC/ILEC network interconnection or in accessing UNEs. NAS explains in its comments why this test is consistent with the meaning of Section 251(c)(6) and why nothing in the appeals court's recent decision remanding the FCC's order establishing this test prohibits the test's reinstatement.

If the Commission decides to replace the "used or useful" test with a new test (which it need not and should not do), NAS asks the agency to hold that an ILEC must collocate any type of equipment used or useful for interconnection or to access UNEs unless the ILEC proves to the Commission that collocation of that equipment is not required as a "practical, economic and operational" matter in order to provide the service that a CLEC desires to provide. To prevent harm to technological innovation, it is important that the Commission require the ILEC to prove that collocation is *not* required as a practical, economic and operational matter in order to *escape* the duty to collocate, rather than requiring the CLEC to prove that collocation *is* required to provide service as a practical, economic and operational matter in order to *obtain* collocation. NAS also explains in this section of its comments why CLECs must collocate DSLAMs, routers and ATM equipment in order to provide DSL-based service as a "practical, economic and operational" matter, and it asks the agency to make clear in any order adopting this new test that DSL service cannot be provided

as a practical, economic and operational matter unless DSLAMs, routers and ATM equipment are collocated.

Second, NAS asks the Commission to clarify that Verizon must provide the packet switching UNE under existing FCC policy since each pre-condition to the obligation to provide that UNE exists notwithstanding Verizon's claim to the contrary in other forums. NAS summarizes each of those pre-conditions in its comments and explains why there is no merit to Verizon's claims that these pre-conditions do not exist.

Finally, NAS asks the Commission to order each ILEC to offer an amendment to existing interconnection agreements giving CLECs either one year to occupy a given collocation arrangement or whatever longer period the ILEC gives itself to occupy unused space for its own use. NAS explains why the non-discrimination provision in Section 251(c)(6) of the Act requires adoption of a rule of this type, and it shows that a rule is necessary given that ILECs have refused voluntarily to follow this non-discrimination policy.

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COMMENTS OF
NETWORK ACCESS SOLUTIONS CORPORATION

Below, Network Access Solutions ("NAS") comments on three important matters raised by the Commission.[1] In Section I, NAS comments on how to define the types of equipment that CLECs providing DSL-based service have a right to collocate pursuant to Section 251(c)(6) of the Act. In Section II, NAS explains why it is necessary for the Commission to clarify its rule requiring ILECs to provide the packet switching UNE. In Section III, NAS explains why clarification of the FCC's space warehousing policy also is necessary to ensure that ILECs comply with the prohibition in Section 251(c)(6) of the Act against the discriminatory provision of collocation arrangements.

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1. *See Further Notice of Proposed Rulemaking in CC Docket No. 98-147 and Fifth Further Notice of Proposed Rulemaking in CC Docket No. 96-98 (FCC 00-297, rel. Aug. 10, 2000) ("Notice").*

ARGUMENT

I. The FCC Should Make Clear that ILECs Must Permit Collocation of the DSLAMs, Routers and ATM Equipment Used In Providing DSL-Based Service Since This Equipment Is "Necessary" to Access UNEs Under Any Reasonable Definition of that Term

NAS comments first on questions raised by the Commission as a result of the D.C. Circuit's recent order remanding the FCC's definition of the term "necessary" as used in Section 251(c)(6) of the Act. [2] That statute requires an ILEC to let CLECs collocate on ILEC premises any equipment that is "necessary" either to access UNEs or to interconnect with the ILEC's network. In 1996, the Commission defined "necessary" as used in this statute as meaning "used or useful".[3] Additionally, in 1999 the agency clarified that equipment is "used or useful" for the required purposes even if it includes *some* functions that are *not* useful for those purposes.[4] In its recent order, the Court remanded this 1999 FCC decision for further explanation.

A. The FCC Should Reaffirm that "Necessary" Means "Used or Useful" for Interconnection or to Access UNEs Since that Definition Is Consistent with the Purposes of the Collocation Statute and Since Nothing in the Court's Order Bars the FCC from Reaffirming that Definition

The Commission should reaffirm that equipment is "necessary" for interconnection or to access UNEs if it is "used or useful" for those purposes. Although the Court remanded the FCC's "used or useful" definition of "necessary" for further consideration, the Court did *not*

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2. *GTE v. FCC*, 205 F.3d 416 (D.C. Cir. 2000).

3. *First Local Comp. Order*, 11 FCC Rcd. 15499, 15794-95 (1996).

4. *See 1999 Collocation Order*, 14 FCC Rcd. 4761 at ¶ 28 (1999).

prohibit the agency from reinstating that definition. Instead, it recognized that the word "necessary" is "ambiguous",[5] and it held only that the FCC's "used or useful" definition "seem[ed] overly broad and disconnected from" the objectives that the collocation statute is intended to achieve when applied to equipment only *some* of whose functions are useful for interconnection or to access UNEs.[6] As a result, the Court held that the FCC must provide "a better explanation" for why such multi-function equipment is "necessary" for the required purposes.[7]

The Commission should reaffirm application of the "used or useful" test because the legislative history makes clear that the collocation statute's purpose is to give the FCC jurisdiction to mandate physical collocation of any equipment whose collocation the FCC concludes facilitates competition, not to restrict the types of equipment that are subject to mandatory collocation. Several years before the statute was enacted, the FCC had adopted a policy requiring ILECs to collocate "[all] equipment necessary to foster competition" in telecommunications services.[8] The Commission made clear that the collocator had a right under this policy to collocate any equipment that "terminates basic transmission facilities" other than circuit switching equipment.[9] Without

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5. *See GTE v. FCC, supra,* 205 F.3d at 421.

6. *Id.* at 422.

7. *Id.* at 424.

8. *First Expanded Interconnection Order,* 7 FCC Rcd. 7369, 7413-14 (1992).

9. *Id.* While the agency recognized that circuit switches are used to terminate basic transmission facilities, it did not mandate collocation of this equipment because it found that circuit switches occupy significantly more space and use substantially more environmental (continued...)

questioning the test that the FCC had adopted to define the types of equipment that would be subject to mandatory collocation, the D.C. Circuit in 1994 invalidated the FCC's physical collocation policy on the ground that the agency lacked jurisdiction to mandate physical collocation of *any* equipment.[10] Two years later, Congress added Section 251(c)(6) in order to give the FCC the jurisdiction that the D.C. Circuit had declared did not otherwise exist. If Congress had intended Section 251(c)(6) *also* to limit the types of equipment that could be made the subject of mandatory collocation, it would have said so in the legislative history since it was aware at the time the statute was under consideration that the FCC had required collocation of any equipment that the agency concluded would promote telecommunications competition. In fact, however, nowhere in the legislative history did Congress express any reservation about the FCC's several-year-old policy to mandate collocation of a broad array of equipment.

Reaffirming the "used or useful" test also makes sense because there is no basis for the assumption that caused the Court in its recent remand order to question that test. Without citing record evidence to support its concern, the Court questioned whether manufacturers might include a new function in equipment used for interconnection or to access UNEs that is *not* useful for those purposes for no reason other than to take advantage of the ability to collocate such equipment.[11]

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9. (...continued)
resources than other types of equipment. *Second Expanded Interconnection Order,* 73 Rad. Reg. (P&F) 1055, 1072 n. 165 (1993).

10. *Bell Atlantic v. FCC,* 24 F. 3d 1441 (D.C. Cir. 1994).

11. *GTE v. FCC, supra,* 205 F.3d at 424.

This concern is unfounded since manufacturers have an incentive to integrate functionality into equipment *only* when integration makes technical, operational, and economic sense. For example, manufacturers integrate multiplexing and data packet extraction into the DSLAM equipment used to access DSL-compatible loops since integration of these functions into a single product makes such good sense from a technical, operational, and economic perspective that all carriers – ILECs and CLECs alike – provide DSL-based service through DSLAMs that integrate all of this functionality into a single DSLAM device. Manufacturers integrate even *more* functionality into the ADSL line card DSLAMs used to access loop UNEs at remote terminals [12] since doing so likewise makes sense technically, operationally and economically. By contrast, although the Court speculated that equipment makers might integrate billing and collection capability into equipment that is used to access UNEs in order to make it collocatable, manufacturers would have no incentive to do this. Integrating billing and collection functionality into equipment used to access UNEs would be economically inefficient since CLECs then would have to pay an unnecessarily high price for the space in which that equipment is housed since the collocation space rental charge is set based on the assumption that the equipment using that space requires expensive security, HVAC and backup power arrangements. Billing and collection equipment would not normally require these extraordinary arrangements. Integrating billing and collection functionality into equipment used to access UNEs also could be inefficient since the CLEC's billing and collection equipment then would be dispersed broadly throughout the CLEC's service territory rather than being placed in a

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12. *See SBC Project Pronto Order* at ¶¶ 14-15, FCC 00-336, rel. Sept. 8, 2000.

central location as usually occurs and since CLECs then would have to comply with elaborate security measures that ILECs have implemented to control CLEC access to collocation arrangements.

In fact, a policy that allowed ILECs to refuse to collocate equipment used for interconnection or to access UNEs merely because it contains a new feature that is not useful for those purposes would stifle technological innovation. Technological innovation occurs when manufacturers are free to add new features to equipment. A policy that complicates a CLEC's ability to collocate equipment used for interconnection or to access UNEs simply because it contains a new feature that is not useful for those purposes would stifle technological innovation because it would give CLECs an incentive to purchase only stripped-down models of such equipment.

B. Even If the Commission Were To Require that ILECs Collocate *Only* Equipment Whose Collocation Is "Indispensable" for Interconnection or to Access UNEs, DSLAMs, Routers and ATM Equipment *Still* Must Be Collocated Since Collocation of This Equipment Is Indispensable to the Provision of DSL Service

If the Commission chooses to adopt a more rigorous definition of "necessary" (even though it need not do so as explained above), it should define the term in the same way that it did in the *UNE Remand Order*.[13] There, the Commission held that a given proprietary UNE would be deemed "necessary" and thus subject to mandatory unbundling under Section 251(c)(3) of the Act

13. *UNE Remand Order*, 15 FCC Rcd. 3696 (1999).

if failure to unbundle the UNE would leave the CLEC with "no practical, economic, and operational" way to provide the telecommunications service it proposes to offer.[14]

Defining "necessary" in the same way as in the *UNE Remand Order* would be consistent with the D.C. Circuit's *dicta* in the recent collocation order recognizing that multi-function equipment plainly would be "necessary" for interconnection or to access UNEs if it were "indispensable" for that purpose.[15] There can be no dispute that a given piece of equipment is "indispensable" for accessing UNEs or for interconnection if there is "no practical, economic, and operational" way for a CLEC to provide the telecommunications service it proposes to provide without collocating that equipment.

If the Commission defines "necessary" as meaning necessary from a practical, economic and operational perspective, it should apply this definition in a way that minimizes the risk that technological innovation will be negatively affected. It can do this by requiring ILECs to collocate any equipment that is "used or useful" for the required purposes unless the FCC has ruled that failure to collocate that particular type of equipment will not prevent CLECs from providing service as a "practical, economic and operational" matter. Technological innovation would be harmed if the Commission instead were to permit ILECs to prohibit collocation of a given type of equipment until *after* the FCC finds that prohibiting collocation prevents CLECs from providing service as a "practical, economic, and operational" matter. Allowing ILECs to prohibit collocation

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14. *Id.* at ¶ 44.

15. *GTE v. FCC, supra,* 205 F.3d at 422.

of a given type of equipment until after the FCC made the appropriate finding would hurt technological innovation since it would add new regulatory hurdles and costs each time a manufacturer desired to add a new feature to an existing equipment model.

The Commission also should make clear in any order adopting this new test that ILECs must permit CLECs to collocate DSLAMs, routers, and ATM equipment used in providing DSL service even if new features are added in the future. It is in the public interest for the FCC to make this ruling *now* since doing so will help reduce the need for future litigation and since DSLAMs, routers and ATM equipment each perform functions that are essential in making the provision of DSL service possible as a "practical, economic, and operational matter", as we show below.

1. DSLAMS

In order to provide DSL-based service, a CLEC must connect a DSLAM to the end of each copper loop over which it provides the service. A DSLAM is used to access the loops of the CLEC's DSL service customers and to multiplex and format the traffic on these loops into ATM packets for transmission by ATM equipment.

Collocation of DSLAMs on the ILEC premise where copper loops of the CLEC's end user customers terminate is the only *economic* way for a CLEC to provide DSL-based service since the costs that the CLEC would incur in order to acquire and outfit commercial space to house its DSLAM equipment outside of ILEC premises would significantly exceed collocation costs as the Central Office Collocation Affidavit shows. This affidavit is attached as Att. 1. First, DSLAMs

require a battery-backup DC power supply to keep the equipment operating in case of power failure. Such power supplies, in turn, require reinforced flooring, compliance with electrical safety regulations and complex grounding networks, all of which prevent their use in most commercial locations. The affidavit shows that high-capacity air conditioning equipment also would be required in order to dissipate the heat radiated by the banks of closely spaced equipment. Since most commercial locations do not provide this kind of air handling, expensive retrofitting would be necessary. Moreover, since most commercial locations do not have high ceilings for overhead cable runs or facilities for bringing cabling between floors, finding suitable space also would be difficult given that telecommunications equipment makes extensive use of cabling to interconnect the components. Finally, even if commercial space could be found that met all these criteria and necessary improvements could be made economically, a CLEC would be subject to the risk that its lease could not be renewed after the initial term. The expense and disruption of relocating DSLAM equipment from even one such commercial location could discourage a CLEC from incurring that risk, as the Central Office Collocation Affidavit also explains.

Even if higher space preparation and rental costs are ignored, a CLEC *still* could not provide DSL-based service *economically* if it was required to place its DSLAM equipment at locations other than the ILEC premises where the copper loops of its DSL customers terminate due to the much higher transmission costs that the CLEC then would incur in order to connect its customer loops to the DSLAMs. In order to provide DSL service to a given end user in that case, the CLEC would have to purchase not only a loop from the end user location to that user's serving

wire center as it does today at a monthly recurring price for a loop of $12 or more, it also would have to buy an additional loop from that serving wire center to the CLEC's DSLAM equipment. A CLEC could not provide DSL service *economically* if its existing loop costs are doubled.

A CLEC also could not provide DSL service as an *operational* matter to many end user locations if it were required to extend the length of its customer loops as described above. Because the transmission speed of DSL service declines rapidly as the length of the copper transmission facilities between the end user location and the DSLAM serving that user location increases, an end user cannot technologically obtain DSL service if the user is too far from the DSLAM. For example, ADSL service cannot be provided technologically to an end user located more than 18,000 feet from the DSLAM serving that user, and HDSL service cannot be provided technologically to an end user located more than 12,000 feet from the DSLAM serving that user. Even if it were possible for the CLEC to find suitable space 1,000 feet from each central office in which to place its DSLAM equipment (which almost certainly is overly optimistic), a large number of end user locations capable of receiving DSL service if the CLEC collocated its DSLAMs no longer could be served as an operational matter (e.g., those between 17,000 and 18,000 feet from their serving central office would be excluded from obtain the CLEC's ADSL service and those between 11,000 and 12,000 feet from their serving central office could not receive HDSL service). This is because there then would be a need to place the DSLAM at the end of the 1,000 feet-long loop that runs from the central office through which the end user's loop is provisioned to the building where the DSLAM is located.

CLECs also could not compete with ILECs in the DSL market as a *practical* matter under a policy that barred them from DSLAM collocation even if they could cope with the economic and operational problems described above unless ILECs *also* were barred from placing their DSLAMs in their own central offices. Otherwise, ILECs would be able to provide service to some customers that CLECs would not be able technologically to serve because of the greater distance between the CLEC's DSLAM and a given end user location than between the ILEC's DSLAM and that same end user location. Similarly, ILECs would be able to provide service to all customers more economically than could CLECs given their substantially lower equipment space rental and transmission costs.

A CLEC also could not provide DSL service as a *practical* matter by extending the length of its customer loops since providing service in this manner would be unlawful. Under FCC policy, a CLEC is prohibited from extending the loops of an end user customer in order to provide DSL service to that customer unless the CLEC *also* uses the same loop to provide a "significant amount of local exchange service" to that same customer.[16] CLECs that provide DSL service usually do not provide DSL service in combination with local exchange service over the same loop since the economics of doing so produce costs that exceed any efficiencies that might result, as the FCC already has found.[17]

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16. *Order Clarifying Supplemental UNE Remand Order*, 15 FCC Rcd. 9587 at ¶¶ 5, 21-22 (2000).

17. *Line Sharing Order*, 18 Comm.Reg. (P&F) 758, 774 (1999) ("[I]f ILECS were [required] (continued...)

2. Routers

CLECs also cannot provide DSL service as a practical, economic and operational matter without the ability to collocate routers. CLECs use routers to conduct remote testing and diagnostics on their DSLAMs. To be used for this purpose, a router must be located adjacent to the DSLAM it is designed to test. When configured in this manner and connected through a dial-up line, a router enables the remote testing of each individual DSLAM slot, the identification and isolation of troubles, and the rapid repair of problems, even when the transport is not functioning. As the Central Office Collocation Affidavit demonstrates, a policy that prohibited the collocation of routers would make the provision of DSL-based service both impractical and uneconomic since it would have the effect of preventing CLECs from isolating and repairing problems connected with DSLAMs in an effective manner.

Prohibiting CLECs from collocating routers without imposing the same prohibition on ILECs also would prevent CLECs from competing against the ILECs' DSL service as a practical matter since ILECs then would be able to provide a higher grade of service. Because customers are highly sensitive to the speed and reliability of DSL service, a CLEC could not compete as a practical matter with an ILEC for the provision of DSL service if it could not ensure a comparable grade of service.

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17. (...continued)
to provide voice service in addition to xDSL-based service [over a single loop,] they would be impaired in their ability to provide the data services they seek to offer").

3. ATM Equipment

A CLEC also needs to collocate the ATM equipment it uses in providing DSL-based service since collocation of this equipment is necessary from a "practical, economic and operational" perspective to access the transport UNE that CLECs need in order to provide DSL service. A CLEC uses ATM equipment to aggregate the traffic of its end user customers at the output of the CLEC's DSLAM for transmission to the destination point of the DSL service that is specified by the DSL customer (such as a point on the customer's private local or metropolitan area network ("LAN/MAN") or the point of presence of the customer's ISP). Without ATM equipment, the CLEC would be unable to aggregate traffic onto a high capacity transport facility but instead would be required to access a large number of low capacity transport links.

One ILEC, Qwest, apparently recognizes that CLECs need to collocate ATM equipment in order to provide DSL service as a practical, economic and operational matter. In a news release issued September 19, 2000, Quest reported that it will permit CLECs to collocate ATM equipment even if the FCC does not require it to do so.[18]

Qwest is correct. It would not be possible as an *operational* matter for a CLEC to provide DSL-based service without collocating its ATM equipment at the ILEC premises where the CLEC accesses transport since the high capacity transport necessary to provide DSL service efficiently often is available *only* at ILEC premises as the Central Office Collocation Affidavit

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18. "Quest Communications Announces Landmark Initiative to Open Local Communications Markets", PR Newswire, Sept. 19, 2000.

explains. For example, even in today's DSL market a CLEC providing DSL-based service sometimes needs transport with OC-3 capacity to accommodate the aggregated DSL traffic from busy central offices where the loops of its customers terminate, and as DSL subscribership grows the CLEC will require a minimum capacity of OC-3 from substantially all of these ILEC central offices. While OC-3 transport is widely available between ILEC central offices, it is rarely available between other locations.

Even if a CLEC somehow could obtain high-capacity transport that runs between its DSLAMs in an ILEC central office and commercial locations other than ILEC central offices, the CLEC could not provide DSL service *economically* since it then would be economically infeasible for the CLEC to acquire and condition the office space necessary for the ATM equipment where the CLEC's ATM equipment would be located as the Central Office Collocation Affidavit shows.

Barring the collocation of ATM equipment also would make it *uneconomic* for a CLEC to provide DSL service since the CLEC then would be required to incur significant costs for transmission equipment that would be unnecessary if ATM equipment were collocated as the Central Office Collocation Affidavit explains. For example, while a CLEC can support at least 12,000 - 18,000 DSL loops provisioned from between eight and 12 central offices with a single bay of ATM equipment collocated in one central office, it would have to install multiplexing equipment in order to aggregate the same 12,000-18,000 loops for transport to the ATM equipment if that equipment could not be collocated.

II. The Commission Should Make Clear that its Rule Mandating the Provision of the Packet Switching UNE Requires that Verizon Provide This UNE In Every Case Where the Functionality of that UNE Is Available to Verizon

The FCC should reject arguments by Verizon that Section 51.319(c)(3)(B) of the agency's existing rules exempts it (and comparably situated ILECs) from the obligation to provide the "packet switching" UNE for the provision of DSL service over DLC-fed loops. Instead, the Commission should hold that Rule 51.319(c)(3)(B) requires Verizon (and comparably situated ILECs) to provide the packet switching UNE to CLECs in every situation where the functionality of that UNE is available to Verizon (or the comparably situated ILEC) for its provision of retail DSL service.[19] NAS offers comments on this matter since the Commission requested comments on what action is necessary to implement the requirement to provide the packet switching UNE if the agency finds that it is not economically, technically, or operationally possible for CLECs to provide remote terminal ("RT") collocation in order to provide DSL service over DLC-fed loops.[20]

Rule 51.319(c)(3)(B), adopted last fall, requires ILECs to provide CLECs with the packet switching UNE for the provision of DSL service to certain customers whose loops contain

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19. *See UNE Remand Order, supra*, 15 FCC Rcd. 3696 at ¶¶ 303-04 (defining the functionality that the packet switching UNE makes available).

20. *See* Notice at ¶ 104 (noting that RT collocation may present "technical or security concerns"); *id.* at ¶ 105 (noting that there may not be sufficient space to permit collocation in many remote terminals); *id.* at ¶ 111 (noting that zoning laws and the need to obtain rights-of-way and easements may make RT collocation impractical); id. at ¶ 107 (requesting comments on implementing the requirement to provide the packet switching UNE if use of RT collocation by CLECs is problematic in providing DSL services over DLC-fed loops).

a digital loop carrier ("DLC") system and thus are provisioned through an RT. Under the Rule, ILECs must provide the packet switching UNE when each of four conditions exists, as follows:

> "(i) the ILEC has deployed digital loop carrier systems, or has deployed any other system in which fiber optic facilities replace copper facilities in the distribution section [of the loop] . . .;
>
> (ii) there are no spare copper loops capable of supporting the xDSL services the requesting carrier seeks to offer;
>
> (iii) the ILEC has not permitted a requesting carrier to deploy DSLAMs at the remote terminal . . .; and
>
> (iv) the ILEC has deployed packet switching capability for its own use."[21]

The Commission should clarify conditions 3 and 4 of its packet switching UNE Rule in order to make clear that Verizon and any comparably situated ILEC must provide that UNE for the provision of DSL service over any DLC-fed loop for which packet switching UNE functionality is available to that ILEC. Clarification is necessary since Verizon has improperly construed

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21. *See also UNE Remand Order, supra,* 15 FCC Rcd. 3696 at ¶¶ 313-17 (explaining the purpose of these four conditions). Although Section 3(d)(i) of the Verizon/GTE Merger Conditions requires that Verizon provide CLECs with a broadband service from remote terminals that is similar to the packet switching UNE regardless of whether it allows remote terminal collocation, it must do so *only* if it chooses *voluntarily* to vest ownership of remote terminal DSL line cards and certain other DSL equipment in its ILECs. This requirement does not apply to Verizon since it has expressed no intention to vest ownership of this equipment in its ILECs. *See* Section 3(d)(i) of Merger Conditions adopted in *Bell Atl./GTE Merger Order* (FCC 00-221, rel. June 16, 2000) (applying to Verizon the requirement in the *SBC Project Pronto* Order, *supra,* authorizing the SBC ILECs to own DSL line cards and certain other equipment used in providing DSL service over loops provisioned through remote terminals subject to SBC's provision to CLECs of a broadband service from those terminals that is similar to the packet switching UNE).

conditions 3 and 4 as exempting it from the obligation to provide that UNE for the provision of DSL service in *any* situation.

A. Since Verizon Does Not Allow Remote Terminal Collocation on Economic Terms, the Rule that Exempts ILECs Who Offer Remote Terminal Collocation from the Obligation to Provide the Packet Switching UNE Does Not Exempt Verizon

First, the Commission should clarify that Verizon has not "permitted a requesting carrier to deploy DSLAMs at remote terminals" within the meaning of condition number 3. This clarification is necessary because, while Verizon provides a *theoretical* opportunity to collocate DSLAMs in or near every Verizon RT, a CLEC cannot take advantage of this theoretical opportunity at *any* RT as a *practical* matter since Verizon's RT collocation terms make it uneconomic for a CLEC to use RT collocation as a means to provide DSL service over DLC-fed loops provisioned through *any* Verizon RT. For example, Verizon prohibits a CLEC from collocating line cards that contain DSLAM functionality at the Next Generation DLCs ("NGDLCs") it is deploying even though it would be less expensive for a CLEC to collocate line cards than stand-alone DSLAMs.[22] Line card collocation would be less expensive than stand-alone DSLAM collocation since line cards are less expensive than stand-alone DSLAMs and since the space rental charge to collocate line cards also would be less expensive given that line cards occupy less space than stand-alone DSLAMs.

22. *See, e.g.*, Reply Brief of Verizon New York at 36 (NYPSC Case 00-C-0127, Aug. 25, 2000).

Even if Verizon permitted a CLEC to collocate DSLAM line cards rather than requiring the collocation of stand-alone DSLAMs, it *still* would be uneconomic for the CLEC to use collocation (rather than the packet switching UNE) as the means of providing DSL service over loops provisioned through a Verizon RT. This is because Verizon not only requires the CLEC to pay all non-recurring costs associated with collocating in or near the RT, it also requires the CLEC to (i) construct a new structure to house the CLEC's cross connect equipment near each of the four fiber distribution interfaces (FDIs) that serve a typical Verizon RT and (ii) deploy transport from each of those FDIs to the RT.[23]

Verizon also makes it difficult for a CLEC to recover its RT collocation costs by prohibiting the CLEC from providing line shared DSL service to end users whose DLC-fed loops are provisioned through an RT where the CLEC is collocated. Instead, the company requires that the ILEC use more expensive non-line-shared loops to serve these customers.[24]

The Remote Terminal Collocation Affidavit, attached as Att. 2, confirms that a CLEC cannot use RT collocation to provide DSL service to end users served by Verizon's DLC-fed loops as a practical matter. It does so by comparing the per loop cost of RT collocation with the per loop cost of central office ("CO") collocation. The affidavit shows that while a CLEC pays an average of less than $10 each month per loop for a CO collocation arrangement, it would have to pay

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23. *See, e.g.*, Bell Atl.-NY P.S.C. No. 914, § 5.10.2(G).

24. *See, e.g.*, Initial Brief of Verizon Mass. at 39 (Mass. 98-57, Phase III, Aug. 18, 2000).

at least $29 per month per loop for a typical RT collocation arrangement. It is self evident that the tremendously higher cost of RT collocation makes that form of collocation uneconomic.

Nor is there merit in Verizon's claim that condition number 3 does not exist merely because it permits a CLEC to construct its own RT near a Verizon RT since such *adjacent* RT collocation is no less expensive than collocation *inside* of Verizon's RTs.[25] The Remote Terminal Collocation Affidavit explains that, while a CLEC choosing to deploy its own RT near a Verizon RT might be able to avoid paying *Verizon* for certain nonrecurring cost elements, the CLEC would not avoid these costs altogether since it then would need to obtain the services covered by those elements from *another* source. Moreover, the affidavit shows that any nonrecurring cost savings for these services would be more than eliminated by the higher recurring costs that the CLEC would incur in an adjacent RT collocation arrangement than in an arrangement where the CLEC collocated inside of the Verizon RT.

B. The Statute Requiring ILECs *Alone* to Provide UNEs Does Not Exempt Verizon from the Duty to Provide the Packet Switching UNE Since the Verizon Affiliate that Owns Some Equipment Necessary to Provide this UNE Is an ILEC for Purposes of the Packet Switching UNE Rule

The Commission also should reject Verizon's claim that condition number 4 of Rule 51.319(c)(3)(B) does not exist merely because Verizon's ILECs will transfer to the company's advanced services affiliate some equipment used in providing that UNE as authorized by the Bell

25. Bell Atl.-NY Reply Comments at 14-15 (NYPSC Case 00-C-0725, May 22, 2000).

Atlantic/GTE merger order.[26] While condition 4 reflects the limitation in Section 251(c)(3) of the Act that the duty to provide a UNE applies only to an *ILEC*, Section 251(h) of the Act defines an ILEC not only as a long-time provider of local exchange service, but also as "a successor or assign" of any such company. The FCC has held that an ILEC's advanced services affiliate is a "successor or assign" of the ILEC for purposes of providing a given UNE when the ILEC transfers to that affiliate a facility used in providing that UNE.[27]

Verizon's claim that its advanced services affiliate is not a successor or assign because equipment necessary to provide the packet switching UNE is used by the affiliate to provide DSL service rather than "local exchange service"[28] also lacks merit. First, the FCC already has implicitly rejected this argument in holding that an incumbent carrier is an ILEC for purposes of Section 251(h) in its role of providing all telecommunications services, including DSL services.[29] In any event, the FCC also has ruled that many advanced services *are* local exchange service.[30]

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26. *See Bell Atl./GTE Merger Order, supra, at* ¶ 263.

27. *See, e.g., Ameritech/SBC Order* at ¶ 365 n. 682, FCC 99-279 (rel. Oct. 8, 1999); *Bell Atl./GTE Merger Order, supra*, at ¶ 263 n. 990.

28. *See* letter to Hon. Joel A. Linsider at 5 (NYPSC Case 98-C-1357, Mar. 13, 2000).

29. *See Deployment of Wireline Services Offering Advanced Telecommunications Capability* at ¶¶ 9-10 (FCC 99-413, rel. Dec. 23, 1999).

30. *Id.* at ¶ 20.

III. The Commission Should Clarify that the ILECs' Use of a Different Space Reservation Policy for CLECs than For Themselves Violates the Agency's Bar Against Discrimination

In response to the Commission's request for comments on the need for a "national space reservation policy,"[31] NAS proposes that the agency strengthen the existing nondiscrimination requirement applicable to space reservation in two ways. First, the Commission should make clear that this anti-discrimination policy bars an ILEC from giving itself a longer period of time to reserve empty central office space for its use than the ILEC gives to CLECs. While the Commission already has held that ILECs "may not reserve space for future use on terms more favorable than those that apply to other telecommunications carriers seeking to reserve collocation space for their own future use,"[32] this policy needs to be strengthened since most major ILECs do not yet comply. For example, even though the Washington Utilities and Transportation Commission has held that Qwest may reserve space for its *own* use for *one year* for equipment of the sort that CLECs collocate, Qwest typically permits a *CLEC* to reserve its empty collocation space for such equipment for just *60 days*.[33] Verizon and GTE likewise typically give CLECs *six months* to use their collocation space while claiming a right to reserve space for their own purposes for two, and

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31. Notice at ¶ 117.

32. *Order on Reconsideration of First Advanced Services Order* at ¶ 33, FCC 00-297 (rel. Aug. 10, 2000). *See also First Local Competition Order, supra*, 11 FCC Red. at 15805-06.

33. Qwest template interconnection agreement with CLECs dated Sept. 21, 1999 at Part D § 2.3.7 (CLEC "must use leased space within sixty (60) days").

sometimes three, years.[34] BellSouth likewise typically has insisted on inclusion of a provision in its interconnection agreements that gives CLECs just six months to use their collocation space even though BellSouth gives itself the right to reserve space for its own purposes for two years or more.[35]

Second, the Commission should require ILECs to propose an amendment to their interconnection agreements in order to carry out this nondiscrimination policy. An amendment is necessary since numerous existing interconnection agreements give CLECs six months or less to utilize their collocation space, which, as indicated above, is less time than ILECs give themselves to deploy the same types of equipment. NAS recommends that the Commission require that the amendment give a CLEC either one year to reserve its unused collocation space for the CLEC's use or whatever other period the ILEC gives itself to reserve unused space for the ILEC's use, whichever is longer. The WUTC already has found that a one-year reservation period is adequate time for ILEC's to use empty space for their own purposes as indicated above. Moreover, consistent with the rule that NAS proposes, BellSouth testified last month before the North Carolina Utilities

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34. *Compare* Verizon template interconnection agreement dated April, 2000 (CLEC may reserve its collocation space for only six months) with Verizon Tariff D.T.E. 17, Part E § 2.2.2.C (permitting Verizon to reserve unused space for its own use for three years; *also compare* GTE July 2000 template interconnection agreement, Collocation Attachment at § 5.6 (CLEC must use collocation space "within a reasonable period of time, not to exceed six (6) months from the date [CLEC] accepts the collocation arrangement") with *Order for Exemption from Physical Collocation* at 3 (Va. Corp. Comm. Case No. PUC960164, Jan. 7, 2000 (permitting GTE to reserve central office space for its own use for two years).

35. *See, e.g.* First Amendment to BellSouth/NAS Interconn. Agreement for all BellSouth states, Att. 4 at § 4.2 (giving BellSouth the right to reclaim an NAS collocation arrangement if NAS fails to use the arrangement within 180 days after it is provisioned).

Commission that it now is willing to give CLECs two years to use their collocation space and to hold itself to the same two year space reservation policy.[36]

Requiring ILECs to offer an amendment of this sort to their existing interconnection agreements would be consistent with Commission precedent. In this same proceeding, the Commission has ruled that ILECs must offer to amend all existing interconnection agreements in order to conform those agreements to the new requirement that collocation arrangements be provisioned within 90 calendar days.[37] The Commission required ILECs to offer that amendment after finding that many existing interconnection agreements give ILECs more than 90 calendar days to provision such arrangements even though the public interest requires provisioning of collocation arrangements within 90 calendar days.[38] Here too, many existing interconnection agreements give CLECs a shorter amount time to use their collocation space than ILECs give themselves for the placement of comparable equipment even though the Commission has held that disparate space reservation policies are inconsistent with the public interest.

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36. *See* Direct Testimony of Jerry Hendrix at 38 (N.C.U.C. Dkt. No. P-100, Sub. 133j, Sept. 15, 2000) ("If it is apparent that . . . [a CLEC's collocation] space will not be utilized and BellSouth has a need for itself or for another interconnector following the expiration of . . . [a] two-year period, the [CLEC should] forfeit that space. Likewise BellSouth will forfeit any of its reserved space following the expiration of the two-year period").

37. *Order on Reconsideration of First Advanced Services Order, supra*, at ¶ 33.

38. *Id.* at ¶ 27.

CONCLUSION

The Commission should (1) adopt a definition of "necessary" for purposes of Section 251(c)(6) of the Act which makes clear that ILECs must permit CLECs to collocate the DSLAMS, routers and ATM equipment used in providing DSL-based service, (2) make clear that Verizon (and all similarly situated ILECs) must provide the packet switching UNE when the functionality of that UNE is available to Verizon (or the comparably situated ILEC), and (3) clarify that an ILEC must give CLECs one year to use their collocation space or whatever longer period the ILEC gives itself to reserve space for its own use, whichever is greater.

Respectfully submitted,

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ATT. 1

Central Office Collocation Affidavit

COMMONWEALTH OF VIRGINIA)

) ss.

COUNTY OF LOUDOUN)

1. My name is Jim Aust. I work for Network Access Solutions (NAS). My title is Vice President, Advanced Technology and Integration Services. Prior to assuming this position, I served as NAS's Vice President of Engineering. Before joining NAS, I was a consultant systems engineer for AT&T. In this role, I was responsible for network design and implementation issues for key accounts and worked closely with hardware and software developers at Bell Laboratories in defining products and feature sets to fulfill networking requirements for individual customers. I also served on the AT&T Engineering Council, which was responsible for formulating methods and procedures for AT&T's system engineering group.

2. NAS is one of the nation's leading broadband network solutions providers. NAS provides Digital Subscriber Line (DSL) and broadband networking services to businesses, including network management, integration, and security services. NAS provides high speed, "always on" local, metropolitan, and wide-area connectivity as a replacement for traditional T-1 and ISDN lines, saving business customers as much as 70% in local facilities expenses. NAS presently operates in the Verizon region, offering DSL service to customers whose loops are provisioned through about 500 Verizon central offices in Massachusetts, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia and the District of Columbia.

3. Effective competition requires that NAS have access to the ILEC's central offices for the purpose of placing telecommunication equipment necessary to provide advanced services. If not for the original FCC rules that permitted NAS to collocate its routers and ATM equipment alongside NAS' DSLAM equipment within the ILEC's central offices, NAS could not have entered the Verizon service territory as aggressively as it has. If ILECs are given the right to prevent NAS from growing its network by

refusing to allow NAS to place ATM and router equipment in the ILEC provided collocation space, then competition will suffer.

4. The purpose of this affidavit is to demonstrate to the FCC that competition cannot succeed if CLECs are prevented from placing telecommunications equipment that is designed to offer high-speed, advanced services in the ILEC's central offices. Placing equipment such as DSLAMs, routers, and ATMs in the ILEC's central offices is necessary to gain access to unbundled loops and unbundled interoffice transport. I will also show that other commercial space is not viable as an alternative to the ILEC's central offices and that such commercial space cannot be reasonably modified to make it a viable alternative.

5. I also show that the lack of fiber optic facilities from the ILEC's central office to most commercial buildings is a technical barrier to competition.

6. Additionally, I show that any network design that does not utilize the ILEC's central office to house its router equipment will result in an inferior service offering that effectively allows only the incumbent to compete for customers seeking advanced high speed services.

7. Finally, I show that a decision by the FCC that prevents CLECs from placing ATM, DSLAM, and router equipment in an ILEC's central office would require CLECs to place more loop aggregation and transport equipment in the ILEC's central offices, resulting in scarce ILEC space and power resources to be consumed quicker. The consumption of these scarce resources would harm the public by artificially restricting the number of CLECs that can collocate in the ILEC's central offices.

8. ILEC central offices are designed for a single purpose: to house telecommunications equipment. Floors are designed to support the weight of the equipment. The air conditioning equipment in central offices is designed to compensate for the high heat radiation associated with telecommunications equipment. Central offices are essentially entirely dedicated to the installation of telecommunications equipment and therefore are designed to allow different pieces of equipment to be easily cabled together even when not in close proximity to each other.

9. Most importantly, central offices are designed with a DC (direct current) power supply that converts commercial AC (alternating current) into direct current and stores it in high capacity batteries. Generators are also installed in many central offices to generate power in the event commercial power is interrupted. These power plants are designed to keep telecommunication equipment working even when the commercial power has failed.

10. These complex power plants made up of rectifiers, batteries, high capacity fuse bays, grounding systems, and generators are designed to support all switching, transport, and other telecommunications equipment in a central office. A CLEC pays its fair pro rata share of these costs. It is cost efficient to build such power plants when it supports many different pieces of telecommunications equipment.

11. If CLECs were forced into other commercial space, there would be no pre-existing power plants installed. Nor would a CLEC likely be allowed to install such a power plant even if it was not cost prohibitive. National electrical safety regulations, landlord restrictions, and limitations from the property insurance carriers would prevent CLECs from duplicating the ILEC's power plant and generators in many other commercial properties. Batteries used in the telecommunications industry are large and very heavy. Many commercial buildings simply would not support the weight of the batteries and the weight of other power equipment and other telecommunications equipment.

12. If a CLEC did not have a DC power plant with batteries and generators, the CLEC's advanced services would cease to function in the event of a commercial power failure while, during the same time, the ILEC's advanced services would continue to operate. This marked difference in the quality of service would doom a CLEC as potential customers would simply refuse to purchase the CLEC's unprotected service while the ILEC touts its service, at the same price, as being available and reliable regardless of external environmental conditions.

13. Even if other commercial space allowed the CLEC to build a DC power plant, the cost to do so would be so expensive that it would preclude a CLEC from doing so. The expense to build a power plant is of such a magnitude that it is not an issue of a decrease in the CLEC's profit; rather, it is a determining factor that would preclude a CLEC from competing at all. Power plants can only be justified when the cost to build them are spread out over many hundreds of different bays of equipment. When a CLEC shares the ILEC's power plant the cost to the CLEC is just "pennies" per service per month. If a CLEC is required to build its own power plant the costs would have to be allocated to as little as three bays of equipment; large CLEC installations would likely never have more than ten to twenty bays of equipment. The cost to the CLEC could be as much as hundreds of dollars per service per month, making it impossible to compete on a price basis.

14. Finally, even if a CLEC could obtain other commercial space and could afford to build a DC power plant, a CLEC's inability to control that property would make investing in the building of the advanced telecommunications network and power plant so speculative that no prudent investor would do so. The ILEC can be assured that once it has

installed its advanced services equipment in its central office that the space allocated for this equipment will always be available to the ILEC, therefore the ILEC would not incur the huge costs to relocate its equipment or the cost to rearrange its existing working customer lines that a CLEC could incur if it could not renew its lease.

15. A CLEC, if it is permitted to use space in an ILEC's central office, can be assured that its space would also remain dedicated to its equipment. Thus it is on parity with its competitor, the ILEC. But if, in a worst-case scenario, an ILEC should try to force the CLEC to relocate its equipment, the state commission and the FCC remain as a safety net to protect the CLEC from unreasonable expenses. Thus, when a CLEC installs its equipment in the ILEC's central office, the CLEC has a measure of safety, ensuring that its original investment is a prudent business decision. This measure of safety justifies the risks that a competitor undertakes when it decides to start an advance services business that is capital intensive.

16. If a potential investor in an advanced services business is forced into a commercial space where there is no guarantee that its leased space will be available to the investor any longer than the initial lease period, then the CLEC business becomes too speculative. In this case, the state commission or the FCC has no power to protect the CLEC. A CLEC could be forced to move its equipment and re-establish its business in a new location just as it is beginning to make a profit. Being forced to relocate its equipment would require the CLEC business to undertake new costs, thus delaying its ability to become profitable. Given the fact that a competitive company must invest in many different equipment sites in each market with this type of uncertainty, it would be foolish for any business to undertake starting a new telecommunications business.

17. Unlike most commercial property, an ILEC's central office is designed so equipment can be connected together by placing cables in overhead cable racks that run throughout the building. If a CLEC is forced to use commercial space rather than an ILEC's central office, the CLEC runs the risk of not being able to expand its equipment space. If the CLEC outgrows its original space the CLEC likely would be forced into additional space not adjacent to the original space. In a central office this would not be a problem because cable racking allows the spaces to be electrically connected by placing cables between the two spaces. In a commercial building this is not possible. The portion of the building between the two equipment areas is the exclusive domain of another business, and the CLEC would be prohibited from placing their cables though this intervening space.

18. For all of the reasons stated above, non-telephone commercial property is not a feasible substitution for space within an ILEC's central office. Failure to require the ILECs to allow the CLECs to use collocation for the

placement of ATMs, routers, and other pieces of equipment used to provide advanced telecommunications services would block effective competition in this segment of the industry to the detriment of the public.

19. DSLAMs are the network elements where customer loops are terminated. Interoffice facilities can also terminate at a DSLAM. DSLAMs act as a multiplexer and connect loops to interoffice transport. As such, DSLAMs are essential because they are the means to gain access to an ILEC's unbundled network elements and to its interoffice facilities.

20. ATMs are also used to gain access to interoffice facilities. One end of the interoffice facility is terminated at the DSLAM while the other end is terminated at the ATM. In other applications, each end of the interoffice facility is terminated at an ATM. Without this ability to terminate the interoffice facility on the CLEC's equipment, the unbundled interoffice network element couldn't be accessed as a discrete network element.

21. NAS seeks to have the FCC order the ILECs to allow competitors to place the same or similar type of equipment in the ILEC's central offices as the ILECs place for their own use. ILECs place DSLAMs, routers and ATMs to minimize the complexity of the advanced services network. If NAS is forced to build a network that requires ATMs to be placed on non-ILEC properties, as advocated by the ILECs, then OC-3 multiplexers would have to be placed in NAS' collocation space so NAS could aggregate loops and transport them to the ATM premises. This transport would have to be over a fiber cable. Today many, and perhaps nearly all, commercial buildings are served over copper cables. Few buildings are served over fiber. A decision that precludes NAS, and other CLEC, from placing its advanced service equipment in the ILEC's central offices forces the CLECs into those relatively few buildings served by fiber where spare OC-3 transport is available. This limitation on the CLECs effectively places the ILEC in charge of the CLEC's network expansion. In the current environment the CLEC is dependent on the ILEC to provide central office space, DC power, and inter-ILEC office transport. A shortage in any one of these items restricts the CLEC's ability to compete with the ILEC. Under the ILEC proposal the CLEC would also become dependent on the ILEC for transport between the ILEC's central office and the commercial building where the CLEC has housed its equipment. This adds one more element within the ILEC's control that could restrict competition.

22. Giving ILECs the ability to restrict competition by making it difficult or impossible for CLECs to obtain transport facilities from the ILEC central office to the CLEC's ATM creates too large of a risk that competition will fail. The purpose of regulation must be to limit the ILEC's span of control over competition, not to enlarge it.

23. NAS utilizes routers to ensure that DSLAMs can be remotely tested even when the interoffice facilities are not functioning. By placing the routers adjacent to the DSLAM equipment, NAS Network Operations Center can test each DSLAM (which supports up to 300 services; 1500 services per DSLAM bay) over a single dial-up ISDN line obtained from the ILEC terminated at the collocated router. The ILEC's proposal to restrict routers from the ILEC's central offices effectively prevents advanced service providers like NAS from being able to effectively isolate troubles and quickly repair problems associated directly with the DSLAM. This restriction would effectively allow the ILEC to offer customers a superior grade of service. The ILECs, unlike the CLECs, would be permitted to place testing equipment and routers in their central offices adjacent to the ILEC's DSLAMs. The ILECs would be able to test and isolate trouble to a particular DSLAM bay, shelf, or slot by using the very network design that the ILECs are denying the CLECs. In this manner the ILECs would position themselves as a provider of a higher grade of high-speed, digital services that other service providers simply could not match.

24. The network design that other competitive advanced services competitors would be left with would pale in comparison with the type and grade of service that ILECs could provide. In a market where the speed and reliability of the service are the deciding factors, the ILEC would be able to out perform the CLEC competitors at a lower cost. The recognition by the users of DSL services that the ILEC has a superior service at the same cost (and potentially at a significantly lower cost due to the difference in the cost of building the two different types of networks) would effectively prevent effective competition from taking place in the advanced services business.

25. If the ILECs prevail, and the CLECs are forced to relocate all non-DSLAM advanced services equipment to non-ILEC space, the demand for collocation space and power will actually increase. Currently, NAS' network design associates one bay of ATM equipment with a cluster of 8-12 ILEC central offices where DSLAM equipment has been placed. This single bay of ATM equipment will support at least 12,000 to 18,000 DSL services. If NAS is forced to move the ATM to another site, NAS would have to place multiplexers to aggregate the UNE loops obtained from the ILEC so they could be transported to the ATM.

26. The router, hub, and test head equipment share a single bay. Even if one assumes that this bay of equipment would be relocated to another site (where the ATM equipment is located), there would be as much as a seven times increase in the number of total bays.

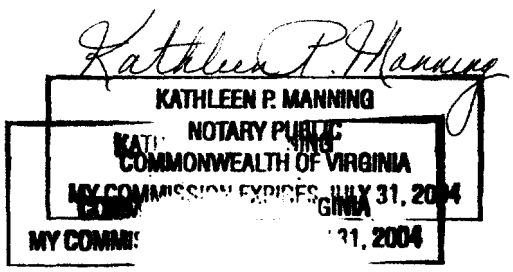
27. The increase in the number of bays of equipment that NAS would have to request from the ILECs would place an unnecessary demand on the ILEC's already scarce floor space and power resources. And this demand

would increase further since the floor space and power requirements of other carriers would also increase.

28. This aggregated increase in demand would act as a barrier to entry for many markets where the availability of floor space and power is already limited. If a competitive carrier cannot obtain collocations in all central offices within a specific geographic area, the carrier cannot effectively compete with the incumbent carrier and other established competitive carriers. Customers will not order service from a carrier that can serve only some of their branch offices. NAS has already experienced delays in markets into which it is expanding. In many cases it is delays due to lack of available power. In some locations there is no remaining floor space. If ATMs, routers, and other equipment required to offer advanced services is barred from the ILEC central offices, then the additional demands for floor space and power, as described above, will increase the number of offices where the ILEC cannot provide collocations within the standard intervals. Delays in getting collocations can be up to a year if the delay is caused by lack of power. Delays can be indefinite if the delay is caused by a lack of floor space. These delays in some central offices within a market make the other collocations in that market ineffective. Thus, accelerating the exhaust of floor space and power, as would occur under the ILECs' proposal, will result in a barrier to new competitors entering the ILEC's serving area.

29. A decision that forces unnecessary costs on companies seeking to offer the public more service options, and that caused scarce resources needed so competition can flourish to be used up unnecessarily, will only serve to strengthen the incumbent local exchange carriers at the expense of the consuming public. The FCC should find that a prohibition on the placement of ATM and router equipment, as well as other equipment used to provide advanced telecommunications services, in the ILEC's central offices will defeat the expressed goal of the Telecommunications Act of 1996. The FCC should find that equipment used to provide advanced services is necessary for the reasons stated above. Failure to expressly require the ILECs to allow the CLECs to place this type of equipment in their central offices will harm the public by reducing competition for advanced, high-speed services such as DSL services.

30. I declare under penalty of perjury that the foregoing is accurate to the best of my knowledge, information and belief.



Subscribed and sworn to before me on this 10th day of October, 2000.

ATT. 2

REMOTE TERMINAL COLLOCATION AFFIDAVIT

COMMONWEALTH OF VIRGINIA)
) ss.
COUNTY OF LOUDOUN)

1. My name is James Aust.

2. I am Vice President, Advanced Technology and Integration Services for Network Access Solutions (NAS). Prior to assuming this position, I served as NAS's Vice President of Engineering. Before joining NAS, I was a consultant systems engineer for AT&T and served on the AT&T Engineering Council.

3. This affidavit confirms that remote terminal ("RT") collocation is not a practical means to provide DSL service to end users served by Verizon's DLC-fed loops. It does so by comparing the per loop cost of RT collocation with the per loop cost of central office ("CO") collocation. This analysis shows that while a CLEC pays an average of less than $10 each month per loop for a CO collocation arrangement, it would have to pay at least $29 per month per loop for a typical RT collocation arrangement. It is self evident that a 190%, or more, increase in cost for RT collocation makes that form of collocation impractical.

4. By collocating its DSLAM, router and ATM equipment in an ILEC's central office, a CLEC obtains the technological capability of providing DSL service to roughly 25,000 loops on average since the typical central office in which CLECs collocate has 30,000 working loops, and about 5,000 of those 30,000 loops typically cannot support the type of DSL transmission desired by the end user either because they contain a digital loop carrier system or because they are too long.

5. While a CLEC cannot technologically use central office collocation to provide DSL service over a loop that contains fiber feeder provisioned through a digital loop carrier system, the CLEC technologically can use remote terminal collocation to provide DSL service over such loops. But when a CLEC collocates its equipment in a given remote terminal, it obtains the technological capability of providing DSL service only to about 2,000 loops through that particular collocation arrangement since 2,000 is the number of loops that are provisioned through a typical remote terminal. By contrast, a CLEC can provide DSL service to 25,000 loops through a typical central office collocation arrangement as explained above.

6. It goes without saying that since a given remote terminal collocation arrangement permits a CLEC to provide DSL service over just eight percent of the number of loops that can be served by a central office collocation arrangement (2,000 loops vs. 25,000 loops), a CLEC cannot use remote terminal collocation economically if it is substantially more expensive than central office collocation even if the arrangement is possible technologically.

7. CLECs cannot economically use remote terminal collocation in order to provide DSL service to end users whose loops are provisioned through Verizon's remote terminals because the price of remote terminal collocation per loop is almost three times higher than the price of central office collocation per loop (more than $29 per month vs. less than $10 per month). In order to demonstrate my conclusion that remote terminal collocation is nearly three times as expensive in Verizon territory per loop than cental office collocation, I compare below the cost of remote terminal collocation and central office collocation in New York. While I use New York prices for purposes of this analysis, the price of remote terminal and central office collocation arrangements in the other Verizon states is comparable to the price in New York.

8. There are two types of collocation costs: nonrecurring costs and recurring costs. Nonrecurring costs are one-time costs that the collocating CLEC incurs in deploying a given

collocation arrangement. Recurring costs are costs that the CLEC incurs on a monthly basis after the collocation arrangement is established.

9. In paragraphs 10 and 11 below, I compare a CLEC's nonrecurring costs per line to collocate in a Verizon remote terminal to its nonrecurring costs per line to collocate in a Verizon central office. In paragraphs 12 and 13, I compare a CLEC's recurring costs to collocate in a Verizon remote terminal with its recurring costs to collocate in a Verizon central office.

10. A CLEC would incur about $800,000 in non-recurring costs for a collocation arrangement that is sized to provide DSL service over 10 percent of the 25,000 DSL-compatible loops provisioned from that office (i.e., 2,500 loops). This $800,000 cost consists of about $50,000 to obtain the collocation arrangement itself and $750,000 to obtain and deploy in that arrangement the DSLAMs and other electronic equipment necessary to provide DSL service over 2,500 loops. If the CLEC actually provided service over all 2,500 loops, its nonrecurring cost per loop would be $320 ($800,000÷2500 = $320). Assuming that the CLEC sought to recover these costs over a three year period, the $320 figure translates to a little less than $9 per month per loop ($320÷36 mo.< $9/mo.).

11. The average nonrecurring cost to collocate in a Verizon remote terminal that contains enough equipment to provide DSL service over 10 percent of the 2,000 loops provisioned

through that terminal (i.e., 200 loops) is $146,000. The $146,000 figure consists of the following elements:

Remote Terminal Nonrecurring Cost Rate Elements	**Price**	**Source**
Collocation application fee	$2,500	Tariff NYPSC No. 914 at § 10.5.7.A.
SAC cable and frame termination charge	$6,000	id.
Combined cost of the RT site survey fee, site preparation fee, engineering and implementation fee, engineering records review fee, and RT serving address inquiry fee	$20,000	id. (stating that each of these elements is priced on an ICB basis)
Combined cost, in connection with requirement to deploy a cross connect cabinet at each of the 4 FDIs that serve a typical RT (the "TOPIC") of the FDI serving address inquiry fee, FDI engineering rewards review fee, and the TOPIC interconnection fee	$12,000	Tariff NYPSC No. 916 at §§ 5.19.4.1(A)(1), 5.19.4.1(A)(2) and 5.19.4.1(A)(4) (stating that each of these elements is priced on an ICB basis.
Application fee for deployment of TOPIC at the 4 FDIs serving a typical RT	$10,000	id. at § 5.19.4.1(A)(3)($2,500 fee for each application)
Service Order charge and service connection charge for DS1 transport between RT and each of the four FDIs	$740	id. at §5.3.4.6(A) ($46 service order charge and $140 service correction charge for each transport link)
Acquisition and deployment cost of TOPIC at all four FDIs that serve the typical RT	$20,000	Conservative estimate of $5,000 per cabinet (includes materials and deployment costs, including cost of negotiating rights of way or easement).
Acquisition and installation of DSLAM equipment at RT	$75,000	
Total	$146,000	

If the CLEC were lucky enough to actually provide DSL service to all 200 loops, its nonrecurring cost per loop would be $730 ($146,000 ÷ 200 = $730 per loop). Assuming that the CLEC attempts to recover these costs over a three-year period, its nonrecurring costs would be more than $20 per loop per month ($730 ÷ 36 > $20).

12 The monthly recurring cost of remote terminal collocation per loop also is far more than the monthly recurring cost of central office collocation per loop. The monthly recurring cost for the central office collocation arrangement described above is about $2,400 as shown in the following chart. This is about $1 per loop assuming that the CLEC provides DSL service to 10 percent of the 25,000 loops provisioned through that central office (i.e. $2,400 ÷ 2,500 loops < $1 per loop per month).

Central Office Collocation Recurring Cost Rate Elements	**Price**	**Source**
Cage (100 sq. ft.)	$ 223	Tariff NYPSC No. 914 at § 10.5.1(B)(1)
Space rental (100 sq. ft.)	$ 985	id. at § 10.5.1(B)(2)
DC power (30 working amps)	$ 597	id. at § 10.5.1(B)(3)
HVAC (30 amps fused)	$ 21	id. at § 10.5.1(B)(4)
Cable racking (5 cables)	$ 160	id. at § 10.5.1(B)(5)
SAC POT Bay termination (2,500 terminations)	$ 25	id. at § 10.5.1(B)(6)
SAC cable and frame termination (2,500 terminations at MDF)	$ 359	id. at §10.5.1(B)(7)
POT Bay Frame	$ 23	id. at §10.5.1(B)(8)
Total	$2,400	

13 By contrast, monthly recurring costs for the remote terminal collocation arrangement described above would be more than $1,700 as the following chart shows. This

translates to more than $8 per loop if the CLEC provides DSL service to 10 percent of the 2,000 loops provisioned through that remote terminal ($1,700 ÷ 200 loops > $8/per loop per month).

Remote Terminal Collocation Recurring Cost Rate Elements	**Price**	**Source**
Space Rental (one rack)	$ 50	Tariff NYPSC No. 914 at §10.5.2(B)(5)
DC power (30 working amps)	$ 597	id. at §10.5.1(B)(3))
HVAC (30 amps fused)	$ 21	id. at §10.5.1(B)(4)
Cable racking (2 cables)	$ 64	id. at §10.5.1(B)(5)
Relay rack (one rack)	$ 17	id. at §10.5.2(B)(6)
SAC POT bay termination (250 terminations)	$ 3	id. at §10.5.1(B)(6)
SAC cable and frame terminations (250 terminations)	$ 43	id. at §10.5.1(B)(7)
Interconnection access charge (250 connections to a total of 4 FDIs)	$ 43	id. at §10.5.2(B)(2)
Two DS1 transport links between RT and each of the four FDIs	$ 880	Tariff NYPSC No. 916 at § 5.3.4.6.(A)
Total	>$1,700	

14 The following chart summarizes the total costs that a CLEC would incur in order to collocate at a Verizon remote terminal with the total costs that the CLEC incurs to collocate in a Verizon central office.

	Remote Terminal Collocation	**Central Office Collocation**
Non-Recurring Costs	>$20 per loop per month	<$9 per loop per month
Recurring Costs	>$8 per loop per month	<$1 per loop per month
Total Costs	>$29 per loop per month	< $10 per loop per month

This chart also makes it clear that a CLEC cannot economically use remote terminal collocation as the way of providing DSL service over loops that include fiber feeder provisioned through digital loop carrier systems. In the first place, collocation costs are nearly three times higher per loop for remote terminal collocation than for central office collocation. Even more significantly, the CLEC's monthly remote terminal collocation costs per loop could be more than 70 percent of the total monthly revenue that the CLEC could expect to obtain from providing service over that loop to residential customers (about $40). When the CLEC's other costs are added to its remote terminal collocation costs, the CLEC would lose money each month for each customer that it served through a remote terminal collocation arrangement.

15 The fact that Verizon permits a CLEC to construct its own remote terminal near a Verizon remote terminal in a situation where collocation inside of a remote terminal is either too costly or not available due to a lack of space does not reduce the CLEC's collocation costs. Although a CLEC choosing to deploy its own remote terminal near a Verizon remote terminal might be able to eliminate payments to Verizon for three of the five ICB cost elements described in paragraph 11 above (site survey fee, site preparation fee, and site engineering and implementation fee), all other nonrecurring cost elements set forth in paragraph 11 still would apply. Moreover, while the CLEC would not have to pay Verizon for these three ICB cost elements, the CLEC still would have to incur these costs by contracting with some other party in order to deploy its own remote terminal near the Verizon terminal. Further, any nonrecurring cost savings for these three elements would be more than offset by the higher recurring costs that the CLEC would incur for adjacent remote terminal collocation arrangement as contrasted to collocation inside the Verizon terminal. Increased recurring costs would include higher transport costs since it would be necessary with adjacent collocation to transport the CLEC's traffic between the CLEC and Verizon remote terminals. Similarly, there would be higher recurring costs for DC power and HVAC because the

CLEC would need to deploy its own HVAC and power systems in its remote terminals if it deployed adjacent terminals rather than sharing the cost of the HVAC and power systems already deployed in the Verizon terminals.

16. Actual remote terminal collocation costs per loop are likely to be far higher than the $29 per month calculated above since that figure is based on extremely conservative assumptions. For example, it assumes that the combined cost of the five nonrecurring costs that are priced on an ICB basis (site survey fee, site preparation fee, engineering and implementation fee, engineering and records review fee, and remote terminal serving address inquiry fee) will total just $32,000 ($20,000 for the remote terminal arrangement and just $12,000 for the four FDI arrangements combined). In fact, it is possible that the combined cost of these five elements will be double or triple that amount. Similarly, I have assumed that a CLEC collocated at a remote terminal would never need to use Verizon's remote terminal escort service even though Verizon requires a remote terminal collocater to use the escort service each time it accesses the remote terminal in order to install, maintain or repair its collocated electronic equipment and even though Verizon charges more than $60 per hour for that service. See Tariff NY PSC No. 914 at § 10.5.7(C)(1).

17. I declare that the foregoing is true and correct to the best of my knowledge.

Kathleen P. Manning

KATHLEEN P. MANNING
NOTARY PUBLIC
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES JULY 31, 2004

Subscribed and sworn to before me on October 10, 2000.